

EMC Technologies (NZ) Ltd

Test Report No 41123.1

Report date: 13th December 2004

Radio Frequency Hazard Information

As per Section 1.1310 and Section 2.1091 certification of this transmitters is sought using the Controlled / Occupational exposure limits as detailed in OST/OET Bulletin Number 65 as a power of 25 watts is to be used in a mobile environment where the use of the transmitter will be employment related.

In addition calculations have been made using the General Public/Uncontrolled Exposure limits.

Minimum safe distances for each of these situations have been calculated below.

In accordance with Section 1.1310 the following Maximum Permissible Exposure (MPE) power density limits have been applied:

- Occupational / Controlled Exposure of 1.0 mW/cm²
- General Population / Uncontrolled exposure of 0.2 mW/cm²

The minimum distance from the antenna at which the MPE is met is calculated from the equation relating field strength in V/m, transmit power in watts, transmit antenna gain, transmitter duty cycle and separation distance in metres:

$$E, \text{ V/m} = (\sqrt{30 * P * G}) / d$$

Controlled

$$E = 1.0 \text{ mW/cm}^2 = E^2/3770$$

$$E = \sqrt{1.0 * 3770}$$

$$E = \underline{61.4 \text{ V/m}}$$

Uncontrolled

$$E = 0.2 \text{ mW/cm}^2 = E^2/3770$$

$$E = \sqrt{0.2 * 3770}$$

$$E = \underline{27.5 \text{ V/m}}$$

The rated maximum transmitter power = 25 watts.

Transmitter operated using a quarter wave whip antenna with a gain of 2.15 dBi (1.64).

The transmitter is a push to talk device that would typically be used with a duty cycle of 50% in a 6 minute period or a 30 minute period.

Controlled

$$d = \sqrt{30 * P * G * DC} / E$$

$$d = \sqrt{30 * 25.0 * 1.64 * 0.5} / 61.4$$

$$d = \underline{0.4038 \text{ metres or } 40 \text{ cm}}$$

Uncontrolled

$$d = \sqrt{30 * 25.0 * 1.64 * 0.5} / 27.5$$

$$d = \underline{0.9018 \text{ metres or } 90 \text{ cm}}$$

Result: Complies

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